



**General Information**

Model 7194 High-Speed Clock Generator provides fixed-frequency sample clocks to Cobalt and Onyx modules in multiboard systems. It enables synchronous sampling, playback and timing for a wide range of multichannel high-speed data acquisition and software radio applications.

**Sample Clock Synthesizer**

The Model 7194 uses a high-precision, fixed-frequency, PLO (Phase-Locked Oscillator) to generate an output sample clock. The PLO accepts a 10 MHz reference clock through a front panel SMA connector. The PLO locks the output sample clock to the incoming reference. A power splitter then receives the sample clock and distributes it to four front panel SMA connectors.

The 7194 is available with sample clock frequencies from 1.4 to 2.0 GHz.

**On-board Reference Clock**

In addition to accepting a reference clock on the front panel, the 7194 includes an on-board 10 MHz reference clock. The reference is an OCXO (Oven-Controlled Crystal Oscillator), which provides an exceptionally precise frequency standard with excellent phase noise characteristics.

**Physical Characteristics**

The 7194 is a standard PMC/XMC module. The module does not require programming and the PMC P14 or XMC P15 connector is used solely for power. The module can be optionally configured with a PCIe-style 6-pin power connector allowing it to be used in virtually any chassis or enclosure.

**Specifications**

**Sample Clock Frequency:** Fixed, 1.4 to 2.0 GHz by ordering option

**Sample Clock Outputs**

**Type:** Four front panel female SMA connectors

**Output Level:** +10 dBm, nominal, sine wave

**Reference Clock In**

**Type:** Front panel female SMA connector

**Frequency:** 10 MHz

**Input Impedance:** 50 ohms

**Input Level:** 0 dBm to +10 dBm, sine wave

**Reference Clock Out**

**Type:** Front panel female SMA connector

**Center Frequency:** 10 MHz

**Output Impedance:** 50 ohms

**Output Level:** +10 dBm, nominal, sine wave

**Frequency Stability vs. Change in Temperature:** 50.0 ppb

**Frequency Calibration:** ±1.0 ppm

**Aging**

**Daily:** ±10 ppb/day

**First Year:** ±300 ppb

**Total Frequency Tolerance (20 years):** ±4.60 ppm

**Phase Noise**

**1 Hz Offset:** -67 dBc/Hz

**10 Hz Offset:** -100 dBc/Hz

**100 Hz Offset:** -130 dBc/Hz

**1 KHz Offset:** -148 dBc/Hz

**10 KHz Offset:** -154 dBc/Hz

**100 KHz Offset:** -155 dBc/Hz

**PMC/XMC Interface:** Power only on PMC P1 or XMC P15

**Environmental**

**Operating Temp:** 0° to 50° C

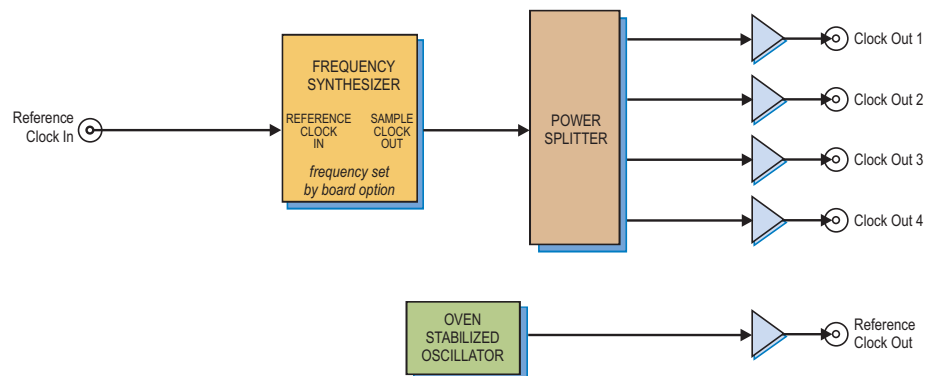
**Storage Temp:** -20° to 90° C

**Relative Humidity:** 0 to 95%, non-cond.

**Size:** Standard PMC module, 2.91 in. x 5.87 in.

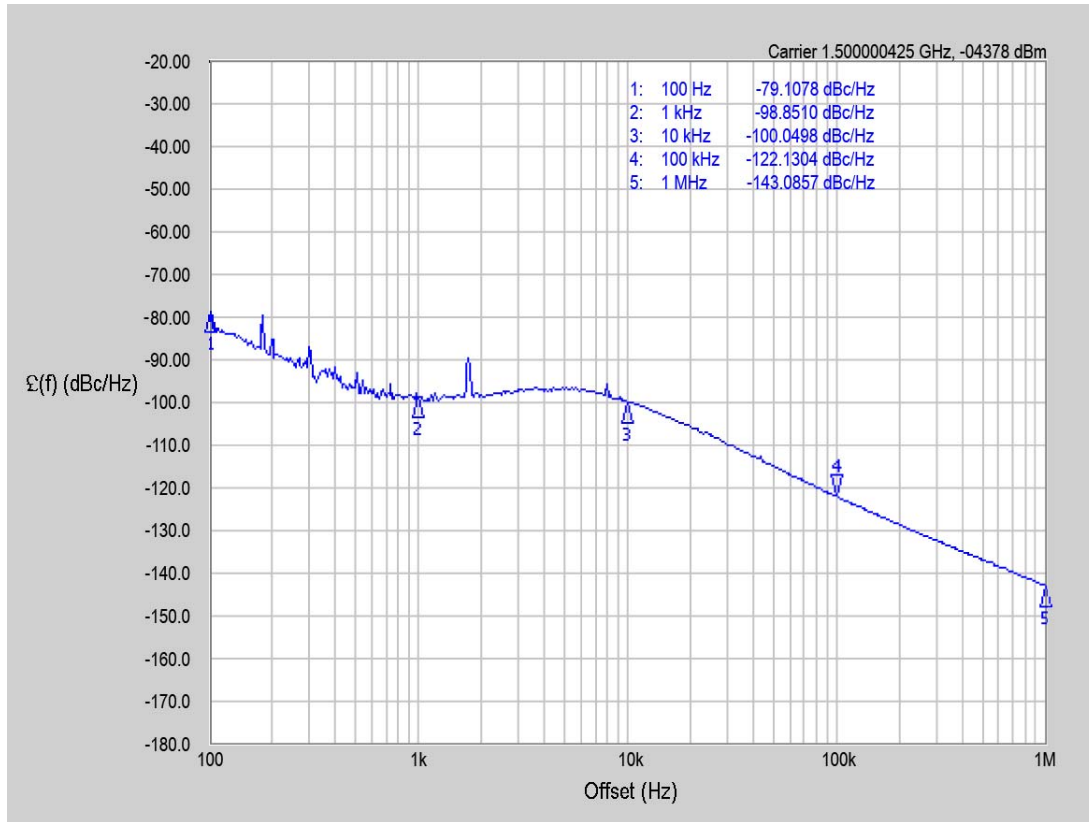
**Features**

- Provides sample clock for up to four separate XMC Cobalt or Onyx boards
- Locks to user-supplied 10 MHz reference clock or on-board reference.
- OCXO provides an exceptionally precise clock



Sample Clock Phase Noise

Phase Noise (1 Hz BW, typical)



Phase Noise 10.00 dB/Ref -20.00 dBc/Hz

Ordering Information

Model	Description
7194	High-speed Clock Generator - PMC/XMC
Options	Description
104	PMC P14 (Power only)
105	XMC P15 (Power only)
106	PCIe 6-pin connector (Power only)
150	1.500 GHz sample clock
180	1.800 GHz sample clock

Contact Pentek for additional sample clock options